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THE MIND:

AN INTRODUCTORY LECTURE,

DELIVERED NOVEMBER 4TH, 1875,

By D. A. MORSE, M.D.,

— OF —

LONDON, OHIO.

Professor of Nervous Disorders and Insanity,

Starling Medical College, Columbus, O.

CINCINNATI:

GAZETTE COMPANY PRINT, N. E. CORNER FOURTH AND VINE STS.

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REPRINT OF LANCET AND OBSERVER, JANUARY, 1876.

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Titles of some* of the published Lectures. Papers, Society Addresses, etc., of Prof. D. A. Morse, and where published.

Vicarious Menstruation, Lancet and Observer, 1865.

Anomalous Position of the Kidneys, Lancet and Observer, 1866.

Delirium Tremens, Lancet and Observer, 1867. 24 pp.

Cause and Nature of Diphtheria, Society Address, Lancet and Observer, 1867. 10 pp.

Criminal Abortion—Why not? Review of Storer's book, Lancet and Observer, '67. 13 pp.

Papers on Camp Diarrhœa, Double Femoral Artery; Contagion; and Cimicifuga, in Medical and Surgical Reporter, 1866,

Cerebral Circulation, Lecture delivered at Charity Hospital Medical College. Course of Physiology and Pathology, Dec. 6, 1867, Lancet and Observer, 1868. Synopsis of Lectures on Digestion, Lancet and Observer, *Ibid*, 14—21 pp.

Cerebral Paresis, Lancet and Observer. 1868. 7 pp.

Pneumonia Repretory, 1868.

Duties of Medical Witness and his Privileges. Introductory Lecture to Course of Medical Jurisprudence and Insanity, January 3, 1870, in Indiana Medical College. Lancet and Observer, 1870. 22 pp.

Questions Medico-Legal: Antenuptial Incontinence and Venerial Disease as a Ground of Divorce. Based upon an Illinois case, submitted to the Author for an Opinion. 12 pp.

OHIO STATE MEDICAL SOCIETY REPORTS.

Dipsomania and Drunkeness, 1873. 52 pp. Transactions.
Monomania, 1874. 46 pp. "
General Paralysis and Blackburn Case,'74. 120 pp. "

Copies of these three Reports will be mailed to any address on receipt of $1 00.

Medical Opinions.

"Dipsomania and Drunkeness. By D. A. Morse, M. D. No better paper has ever been published upon this subject." (*Journal Materia Medica, May*, 1874).

"In a full and learned article by Dr. D. A. Morse published in the Transactions of the Society last year, the opinion of the Profession is embodied." (*Report of Special Committee upon State Inebriate Asylum, Trans.* 1874. John W. Russell, Chairman of Committee).

General Paralysis. "This elaborate paper displays much industry and enthusiasm on the part of its author. It reviews pretty fully the literature, mostly foreign, concerning the symptomatic history, diagnosis, and pathology of General Paralysis, of the Insane. * * The Paper will be of great use to those who are called on in similar cases (i. e. Blackburn case), as indicating pretty fully the teachings of the leading authorities bearing on the subject. (*Chicago Journal of Nervous and Mental Disease*).

"Able and interesting Reports." Prof. A. Sager, M. D., late Dean of the Medical Faculty, University Michigan.

"REVIEWS.—REPORTS FOR THE LAST YEAR TO THE OHIO STATE MEDICAL SOCIETY.

By refcrence to these Reports, it will be seen that there is represented in them much of all that is known on the subject of Dipsomania, while the literature of General Paralysis is quite fully presented. There is no other book known to the Profession that treats the subject in the same way, or that gives more of it. Dr. Maudsley, of London, Eng., says: 'It is very valuable, containing so much in so little space.' The report on 'Monomania' defines Instinct, Intuition, Consciousness, etc. It is both metaphysical and physiological, which is the only true method of mental study.

Dr. D. A. Morse, of London, Ohio, the accomplished author, has made these and kindred subjects his study for many years, and he gives the result to the Public in a most readable and instructive manner." (*American Medical Weekly, Aug.* 7, 1875).

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* Others upon Cholera, various phases of Insanity, Malpractice, etc., are omitted for want of space.

THE MIND:

INTRODUCTORY LECTURE,

Delivered at Starling Medical College, Nov. 4, 1875,

By D. A. MORSE, M.D.

Professor of Nervous Disorders and Insanity.

What is the Mind?—How is it related to matter? Is it a property of Matter? How are Mind, the Vital, and Physical Forces related? From what standpoint shall we study the mind—i. e., shall we pursue the Physiological or the Psychological Method?

Gentlemen:—In presenting an introductory to my course, I shall not apologize to you for having neglected to set forth, as if it were required, its merits, its claims upon the Profession, or its practical importance; to do so would create the presumption that otherwise it would not receive from you the attention to which it is entitled.

The frequency of nervous and mental disorders; the almost incredible expenditure of money by every nation for the treatment of this class of patients; the life-long earnest devotion of hundreds of our profession, exclusively to the study and investigation of these obscure and difficult subjects, changes to you, except you give them most thorough and careful examination, the burden of an apology.

The questions I have presented are those which, to-day, as in all the past of mental science, excite most attention, and from the fact that science cannot settle them, most controversy. I am not unmindful, that in selecting questions that have absorbed with so little success, the attention of so many thinking men, that my efforts will prove an elaboration of the subject to be considered, a multiplication of inquiries, rather than a so-

lution of mysteries, or a satisfactory reply to the questions presented; nor am I unmindful that however well discussed these great and interesting problems may be, the startling truth ever will confront us and declare that, when we pass from the world of Matter to the world of Mind, our proud intellects will be humbled with the conscious impotence of finite mind, and its utter inability to penetrate the darkness that obscures the work of the Infinite, and discover the secrets of the Almighty.

The profound mystery of the union of Mind and Matter, of their intercourse, and of the influence of Mind upon Matter, has in all ages bewildered the most learned philosopher, and although his allotted three score years and ten have been passed in a survey of it, he has been able, as a result of his labors, to transmit to succeeding generations but his own inheritance: The simple fact, that apart from the phenomena of mind, the manifestations of mind, operating through its material instrument, we have no knowledge of mind, and that mind as a separate existence, when isolated from matter, is wholly a subject of Faith—dependent upon revelation. Man being adapted to a material universe, dependent upon a material organization, must be subject to the laws that govern the instrument upon which his mind acts to produce its phenomena, and it having power to reveal itself only through the co-operation of a physical world, it is not a source of astonishment that man, when engaged in a study of mind, in relation to matter, should become embarrassed and lost: and doubting the reality of what he cannot comprehend, despising the voice of Revelation, declare that he is a product of matter, a creature of blind necessity, exhibiting in his phenomena but a display of the laws of the physical world, thus identifying mind and matter.

With these views or theories I have no sympathy. To me it seems more credible, that all existing things had their origin in the operation of an intelligent First Cause than that matter organized itself into living forms, or that the forces supposed to be resident in it can be self-acting.

While this is the true line of demarkation which separates materialism from the Spiritual theories, the real battle ground of the philosophies, there are multitudes of other theories, that in past time have governed the productions of the most powerful intellects of the ages in which they lived. These views have been as numerous, as diverse, and as well defended as language would enable their respective advocates to render them; and in many of them we recognize not only the germ, but the fully mature views of writers of the present day. In

the views we cite, we use, as these writers themselves have done, mind and soul as indicating the intellect, whether correct or not.

Philosophy made its first start in Ionia, then a Grecian colony. From Ionia it extended to other colonies, and at last to Greece proper, where, in consequence of trouble with Italy and Persia, it was centered at Athens, and from this intellectual center radiated over all Greece. Philosophy found its origin in an attempt to determine the elementary principle of the world. The first notions were disseminated by oral teachings, and handed down by tradition.

Thales, B. C., 600, of Miletus, in Ionia, was the first Grecian who applied reason to determine the origin of the world. He made experiments, and concluded that water was the original element, and spirit (νοῦς) the impulsive principle. From the action of the magnet, he inferred that everything had a soul and was full of divinity.

Pythagoras, B. C., 550, belonging to the same period, taught that mind and soul are emanations from the great central fire —the Sun. The Sun (the seat of Jupiter) was the most perfect object in Nature; the principle of heat, and consequently of life, permeating and vivifying all things. He regarded the soul as being in constant activity, capable of combining with any body, and compelled to pass through several successive stages. It is supposed that Pythagoras borrowed this theory from the Egyptians. (Herodt. ii–123.) Pythagoras is supposed also to be the first who attempted, rude as it was, an analysis of the operations and faculties of the mind. The intellect or understanding was located in the brain; the will and appetites in the heart. He made a distinction between the human and the animal soul.

Heraclitus, B. C., 500, attributed everything to fire—which he thought to be the elementary principle upon which every thing depended—the foundation of all things. He believed that all Force is identical—the principle physical force the same as that of thought. Here we find the germ of the doctrine, if not the doctrine itself, of the equivalence or correlation of force, i. e., that heat, light, electricity, chemical affinity,* vital force, and mind are identical, and are but different modes of motion.

Moschus, B. C., 500, advocated what is known as the atomic theory. The elementary principles that figured in this system, were atoms, motion, and vacuum. The atoms are the ultimate elements of all that is real. They are invariable, indivisible, and imperceptible. They occupy space—are infinitely diver-

*some of the writers exclude chemical affinity from the list.

sified—those that are round, possess motion. By their union all things have their origin, while their separation is dissolution. Their modification and properties are determined by the position and order of particles, and take place in obedience to a law of absolute necessity. This is a shadow of Huxley's Protoplasm, or Physical Basis of Life. The atomic theory was to some extent believed in by Sir Isaac Newton, who believed that between the atoms the imperceptible space was filled with a subtile ether. Hartly made this the basis of his Philosophy, A. D. 1749, and taught that vibrations of this subtile fluid caused the phenomena observed.

Anaxagoras, 500 B. C., taught the existence of the intellectual principle.

Democritus, the laughing philosopher, B. C., 494, taught the atomic theory of Moschus, expanded it, and extended it to the whole universe—embracing the heavenly bodies. The soul he believed to be composed of *fire*, in the form of globular atoms, which impart *motion to the body*.

Diogenes, B. C., 472, taught that air was the fundamental principle of all Nature. He imputed to it intellectual energy.

Archalaus, B. C., 472, believed all things were disengaged by two discordant principles, from Chaos. These principles were heat and cold, or fire and water.

Empedocles, B. C., 460, made four elements: earth, air, fire and water. The soul he located in the blood, and consisted in a union of these four elements.

Socrates, B. C., 470, regarded the soul as a divine nature; and on account of the power of reason and its invisible energy, thought it immortal. He was a powerful antagonist of the Sophists, who had an *apparent*, superficial knowledge, and who desired to distinguish themselves rather by the show of pretended knowledge, by raising ridiculous, fanciful, intricate, or useless questions, and tricks of logic, rather than by a desire to develop truth. This proved, however, the beginning of a more thorough investigation of the foundation on which philosophy rests, the Sophists compeling their opponents to adopt systematic methods of proof. The Sophists, like most of the Physiological School of the present day, attempted to so confound truth and error, to so explain away all foundations of truth, religion, and morality, that even the existence of things was doubtful. They declared that *nothing real exists*. Socrates encountered these men with only appeals to their good sense and consciousness of moral principles. He taught the duty of man towards himself and others, to his country, the practice of virtue and morality. His chief power to control the

masses lay in the affectation of profound ignorance, and by his acute reasoning seemingly draw out the truth by almost imperceptible powerfully convincing advances. His popularity and success caused so great envy and hatred that he was put to death, B. C., 400, by Hemlock.

Plato, B. C., 430, was a Rationalist, and founded his system at the Academy at a time when reason was powerful, and the union of the Porch and Academy was approaching. His chief persuasive power, like Socrates, lay in his gradual approach to the truth, for which, as better suited to his purpose, he employed dialogues. He first taught the doctrine of *innate ideas* which Locke combats so vigorously in his Metaphysics. These innate ideas Plato regarded as the eternal type of things. Hence knowledge is not the result of experience but only developed by it. The soul he regarded as a self-acting energy, and as having an existence separate from the body. Virtue he defined to be imitation of God. perfect harmony resulting in no other way. We will give his views concerning the relation of soul and body hereafter.

Aristotle, B. C., 384, regarded the soul as the active principle of life. The soul is distinct from the body, but of the same form and inseparable therefrom. The faculties of the soul he regarded to be: Production, Nutrition, Sensation, Thought and Will, or Impulse. He is the first to recognize distinctly what metaphysicians term *Consciousness*. He discussed our means of knowledge, common sense, imagination, memory, and recollection. He blended all the forces as identical. He was the first who taught physiology.

Aristoxenus, B. C., 320, regarded the soul as a vital energy, inherent in the body, a *harmony* elicited from the body as those elicited from the chords of an instrument.

Epicurus, B. C., 337, advocated the atomic theory. He regarded the soul as material, its elementary principles are heat, and some nameless untangible ether spirit, upon which sensibility depends. This ether he thought to be dispersed throughout the body. In this we see the germ of Hartley's "vibrations." It is also in some respects the theory entertained by Sir Isaac Newton.

Zeno, B. C., 260, was a physiologist, and in his physiology taught that sensation and perception are the basis of knowledge—there are two eternal principles of all things: Matter, which is passive; and divinity, which is active; the source of all activity, another of form and arrangement. By this theory God is *in* the world, not *without*. Hence the world is a living being. This divine soul not only filled the world, but

all created things, and is the soul of man, is corporal and perishable. Zeno was a Stoic. This ended Grecian philosophy, or extended to the period of the new Academy when the Romans began to figure in it. Among the first of these to attract attention was Cicero, the orator. He left a number of works which throw more light upon the history of philosophy than add new lustre to it. He accepted mainly the views of Plato—was a Stoic in principle—as a man, was moral in his private life.

Thus might we continue and multiply views, showing those entertained by the Jews, the Fathers of the church in the middle ages, passing on down to the philosophy of modern times. The writers of this period are numerous; in fact, so extensive is the literature of the last two or three centuries that, were you to attempt to wade through it, you would be discouraged at the onset by merely examining the list of more important writers. It is impossible to name a theory that some one has not advocated.

Sir John Davies, a writer upon the immortality of the soul, has in a short poem well expressed the variety and diversity of views entertained by writers, as well as the difficulty of presenting new theories:

"Musicians think our souls are harmonies;
Physicians hold that they complexions be;
Epicures make them swarms of atomies;
Which do by chance into our bodies flee.

"One thinks the soul is air; another fire;
Another blood diffused about the heart;
Another saith the elements conspire,
And to her essence each doth yield a part.

"Some think one general soul fills every brain,
As the bright sun sheds light in every star;
And others think the name of soul is vain,
And that we only well-mixed bodies are.

"Thus these great clerks their little wisdom show,
While with their doctrines they at hazzard play;
Tossing their light opinions to and fro,
To mock the lewd, as learned in this as they.

"For no crazed brain could ever yet propound,
Touching the soul so vain and fond a thought,
But some among these masters have been found,
Which in their schools the self-same thought have taught."

Whilst it may be agreeable and interesting to study the past history of mental science, and as metaphysicians roam in imagination through the broad universe constructing theories that will explain its origin and that of mind, or ex-

ploding theories of others as to the nature of the mind, we must proceed to consider the more important matters of the lecture.

As our questions intimate, there are two antagonistic, or essentially different methods of investigation of mental activity, two distinct schools. We say antagonistic, for by their respective adherents they are made such, but by a true method they become each the counterpart or interpreter of the other. These are the *physiological* and the *psychological methods.*

The Physiological school bases its theories upon the anatomy and physiology of the brain: to them mind is but the result of cerebral organization. Cabanis taught, and many of this school after him, that the brain secretes *mind* as the liver bile, and that a diseased brain gives rise to a diseased mind in the same way that a diseased liver or stomach gives rise to deranged secretion.

Bain, a distinguished writer of this school, advances the following as evidences that the function of the brain is to produce mind. He says:

"The brain is the principal, although not the sole organ of mind, and its leading functions are mental. The proofs of this position are these:

1. "The physical pain of excessive mental excitement is located in the head. In extreme muscular fatigue, pain is felt in the muscles; irritation of the lungs is referred to the chest, indigestion to the stomach, and when mental exercise brings on acute irritation, the local seat is the head.

2. "Injury or disease of the brain affects the mental powers; a blow on the head destroys consciousness; physical alterations of the nervous substance, as seen after death, are connected with loss of speech, loss of memory, insanity, or some other mental deprivation or derangement.

3. "The products of nervous waste are more abundant after mental excitement. These products, eliminated mainly by the kidneys, are the alkaline phosphates combined in the triple phosphate of ammonia and magnesia. Phosphorus is a characteristic ingredient of the nervous substance.

4. "There is a general connection between the size of the brain and mental energy; in the animal series intelligence increases with the development of the brain. The human brain exceeds the animal brain, and the most advanced races of men have, as a general rule, brains of an unusual size. The average weight of the brain is 48 oz; the brain of Cuvier weighed 64 oz. Idiots commonly have small brains.

5. "By specific experiments on the brain and nerves, it is shown that they are indispensable to the mental function." Hence the conclusion that mind is the result of cerebral organization. In it we see only what is admitted by the Psychological school as evidence that the brain is the organ or the instrument of the mind.

Prof. Leibig, an advocate of the views of this school, declares that "in the universal body we recognize as *ultimate cause of all force* only one cause, the *chemical action* which the elements of the food and the oxygen of the air mutually exercise on each other. The only known ultimate cause of vital force, either in animals or in plants, is a *chemical process.* If this be prevented the phenomena of life do not manifest themselves."

Prof. G. F. Barker, of Yale, in a lecture on the Correlation of the Vital and Physical Forces, in 1870, said: "No doubt can be entertained that the actual energy of the muscle is simply the converted potential carbon of the food. A muscle, therefore like a steam engine is a machine for converting the potential energy of carbon into motion." He says: "Chemistry teaches that though force, like muscular force comes from food, and demonstrates that the force evolved by the brain like that produced by the muscle comes not from the disintegration of its own tissue, but is the converted energy of burning carbon. Can we longer doubt then, that the brain, too, is a machine for the conversion of energy? Can we longer refuse to believe that our thought is in some mysterious way correlated to the natural forces? And this even in the face of the fact that it has never yet been measured?"

When I was a student I was taught to believe in the existence of vital force, the *anima* of Stohl, the *vis medicatrix naturae* of Cullen, the so-called *conservative power of nature* of other writers. This doctrine as taught by the physiological school does away with this force, substituting chemical action. Virchow says, "The old doctrine of a vital power is a pure superstition, a doctrine of the devil, a search after the philosopher's stone." I must confess that I am in this respect very superstitious, and recognize in his assertion how difficult it is for a man to get free from the innate sense of a spiritual existence, for even in this he attributes it to the *devil.* Is his devil also the result of chemical action—another form of physical energy? If matter and force alone exist where does he borrow his devil from? A singularly unique spiritual existence!

Carl Vogt, after repeating the views of Cabanis, says: "The appeal to a vital force is merely a periphrasis of ignorance.

It constitutes one of those back doors of which there are so many in science, and which are the constant refuge of indolent minds who will not take the trouble to investigate what appears incomprehensible, but are satisfied with accepting the miracle."

Dr. Louis Buchner, on Force and Matter, says: "The notion of a vital force is reduced to a walking shadow, and exists only in the brains of such individuals as have lagged behind the sciences. All those who have specially studied any branch of natural science touching the organic world, agree now in regard to vital force, and the term itself has become so obnoxious that it is rarely used."

This is necessary before the views of the Physiological school can be admitted, for to acknowledge a vital force destroys the whole theory. But to assert there is no such thing as vital force, and to demonstrate the truth of such assertion, are two entirely different things. The more you study the claims of this school the more thoroughly will you be convinced that the basis of all its teaching rests upon mere assumption—a begging of the question, a reasoning *petitio principii.* They make great claims for it that it rests upon experiment, observation and experience; to assert that there is mind and vital force is in no way disproved by asserting there is *not.* Has experience demonstrated in any other manner a negative result?

I am aware that it is not popular to teach the antiquated doctrine of a vital force. Yet, notwithstanding this, I cannot accept, until it has been proved, the assertion as true that the physical, vital and mental forces are identical.

According to Youman, heat, light, electricity and magnetism, which were treated of by the old writers as imponderable agents, are now no longer regarded as independent existences. —subtile fluids with peculiar properties, but simply as modes of motion in ordinary matter; forms of energy which are capable of mutual conversion. Heat is a mode of energy manifested by certain effects. It may be transformed into electricity, which is another form of force producing different effects. Thus electricity will generate heat, and heat when operating upon a conbination of metallic plates will produce electrical action. A given amount of one force produces a definite amount of another. The assertion that mind and these forces are identical, cannot be demonstrated as true by this test, for no thought has been transformed into electricity; nor has heat, light, or electricity ever been exhibited as the equivalent of a definite amount of mental force. It may be

assumed but never can be proved, nor can it be proved that vital force and mind are identical. There is much greater resemblance between nerve force and electricity than between mind and vital force. Thus the muscle with each contraction gives off electricity and as exhaustion follows ceases to show its presence.* This force, whatever it is, is closely allied in its nature to electricity. Yet that it is not electricity is shown by the fact that when sufficient time has elapsed after death for muscular contractility to cease, no current however strong will elicit a response from the then dead muscles. There was a force present that electricity could stimulate to activity, yet when absent renders electrical action without effect. We know that electricity will call muscle into play, will excite the sensory organs, causing light, smell, taste and sound to be perceived, yet we have no evidence that it will produce thought. It will give rise to physical activity but not mental in the same manner. Thought follows no known physical law. A single thought, expressed perhaps months or years before, looming up in consciousness, is often more powerful than all else in producing physical activity, yet it is not uniformly correlated in physical effects. Thus, what will cause one man to swear, stamp and gesticulate furiously, will not perhaps have any effect upon another, while a third may suppress, by an effort of the will, the rising storm. If we interrogate consciousness it responds that volition, the will power of the Ego, alone can suppress emotion and calm the tempest of passion. Passion may be excited, the emotions almost uncontrollable as it were, yet some self-determining power says peace, be still; and immediately there is a great calm. Here is a force that controls other forces. It is self-acting and self determining. If nerve force be electricity, and will power identical, why is it that outside of the human brain they never act in this manner? If you determine that mind and the motor power of the nerve centers that administer to voluntary motion are the same, what do you do with involuntary muscular action, as the contraction of the heart, intestines, stomach, arteries, gland ducts, etc? Are you prepared to admit that vital force, that hidden power which develops all living organisms, which rears the superstructure of the body from a simple cell, moulding and fashioning matter to a definite form, in conformity to some original type, is but the adventitious operation of heat, light or electricity, and differs from these other forces but in its "mode of motion?"

* Radcliff claims that contraction results from the discharge of electricity, and not *vice-versa*.

Prof. Huxley, in his Physical Basis of Life (1870), sets forth the view that matter and life are inseperably connected. He claims that all bodies have some one kind of matter that is common to all,* and that their endless diversities are bound together by a physical, as well as an ideal, unity; that the mould upon the bread crust, the lofty California pine, or Indian fig tree which covers acres, the tiny animalcule of stagnant water, and the mighty leviathan of the deep, man, lord of creation, and the beast that bears him on his journey, are all moulded from the same matter of life; that there is a unity of power or faculty, a unity of form, and a unity of substantial composition. The matter of all bodies is the same in kind when traced back to its earliest state. This matter he terms "Protoplasm." He declares this Protoplasm, or Physical Basis of Life, to be the clay of the potter, separated by artifice, and not by nature, from the commonest brick or sun dried clod.

But here Prof. Huxley loses sight of a very important fact, when he asserts that all living forms are of the same fundamental character, and may be likened to the clay in the hands of the potter; for he asserts that all *vital action* is but the result of the molecular forces of the Physical Basis, and further concludes, that all *thought* is but the expression of molecular changes in the matter of life, which is the source of all vital phenomena. Now, the moulding force and the clay moulded are not the same—the clay does not resolve itself into the baked and painted forms, but is moulded by an external force. Were we to analyze the clay, the paint, or the baked ware of the potter's shop, our conclusions would be as sensible concerning the force that moulded it as are those of Prof. Huxley, in asserting that the phenomena of life are self-directing, and belong to the oxygen, hydrogen, carbon and other elementary compounds which enter into the composition of the body, and are said to have inherent to them the properties of vital and mental phenomena. His illustrations are most unfortunate for his theory, as they nearly always are when an attempt is made to set aside the Creator and substitute *Force*. They generally disprove what they set out to prove. If we make any inferences whatever from his illustrations, they certainly prove the contrary of the theory they are intended to sustain.

Prof. Huxley declares that, under whatever disguise the Physical Basis of Life may take refuge, whether fungus or oak, worm or man, the living protoplasm not only ultimately dies,

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*Expressed by Agassiz in 1848, in a lecture at the Lowell Academy.

and is resolved into its mineral and lifeless constituents, but that these are the same and differ only in the manner the atoms are aggregated. Cooked meat he calls modified protoplasm and says of it, that it has only been altered, but not rendered incompetent to resume its old functions as matter of life.

He says: "a *singular inward labratory* dissolves a portion of this modified protoplasm, the solution so formed will pass into my veins; *and the subtil influences to which it is then subjected* will convert the dead protoplasm into living protoplasm and and thus transsubstantiate sheep into man."

He claims that the matter of life, i.e., that from which all organized beings are formed, is identical, and that their respective organizations are due to the forces of the molecular basis. What is this "singular inward labratory" to which he refers, and the "subtil influences" to which digested food is subjected that converts it into living organisms? Is it not vital force? I will not contend that all flesh when deprived of vitality may or may not be resolved into some like, simple element. But, if all originate from the same basis and the forces of this molecular basis operate to form the various vegetable and animal organisms, why does this same force from the same matter of life construct an animalcule and a whale? Why does one part form the minute odium albicans, and another the white oak tree? Is not the difference in the flesh of man and other influences due to the "subtil influences" to which it is subjected in the organism? It never is observed elsewhere, and shows that this "subtil influence" is a property of the *organization*, and not of the original matter entering into it, and that it never assumes the character of the material substance composing the organization, until it has been subjected to its influence, or the influences of the forces belonging to the organization. This power to assimilate new matter to itself gives to all organizations that character we term life. Inorganic matter seems to be endowed with properties in some respects similar to organic. Thus the crystal will form from its mother liquor, each metal according to a definite form, and seems to obey the same law that operated to construct the body. But the force that constructs the crystal and that which constructs the body differs in this: you cannot remove it from the metal—a very slight cause often drives vital force from an organized body. Break a crystal, or piece of marble into many fragments and each preserves its integrity. Remove a portion of an organized body and it immediately undergoes change. To maintain its integrity it must remain in an intimate union with the body from whence it derives vital power.

If transformed into the substance of any other organism, this takes place only when brought under the "subtile influences" of the "singular inward laboratory," Nature has provided in such organism.

Prof. Huxley says: "If I sup upon lobster this same matter of life becomes a part of humanity. Were I to be shipwrecked and this action reversed, the same lobster might return the compliment by converting humanity into a crustacean." This in no way proves that lobster and man are identical organizations, or that the forces of the molecular basis make this transformation, but it clearly shows that the forces peculiar to the organism of each, accomplish it.

The great effort of so-called scientific men of the present day, is to decry Revelation and Faith, and base everything upon *experience.* Observe, as long as you will, the transformation of the matter of one organization into that of another, and your experience throws no light upon the nature and source of the forces operating, further than the phenomena resulting from their activity. If there is no such thing as vital force, what originates chemico-vital action, and what arrests it? Why will it not proceed as well in, what we term, a dead body, as in a living one? Simply, because something is wanting in the dead body that is supplied in the living one. This invisible something does the work. Must we remove it from the body, hold it up to public gaze before its existence will be acknowledged? Is this to be the test of all our knowledge? Must all faith be forever obliterated, and the word become obsolete? If all our belief is thus subject to experience, how meagre will be our stock of knowledge.

An amusing application of this theory occured a few years since, at a ministerial association held at Danville, Ills. A good brother, who had been reading some of this class of writers, who rest upon experience, declared that he preached only what he had personal experience to confirm. Some one inquired if he ever preached the doctrine of the final resurrection of the dead. The good brother was greatly mortified at the failure of his theory. Thus it is with all who attempt to construct theories that will set aside the Creator, and elevate the phenomena of matter to His place. We are glad that men, of equal intellectual capacity, with more expanded reasoning faculties, interpret nature differently. Beale: Life, Matter and Mind; p. 4, says: "He, who choses, may accept upon faith as an article of belief that all the action of living beings are due to ordinary forces only; but it is absurd to put forward such conclusions, as if it had been proved, or as

if it were capable of proof." On page 130, he says: "All the energy, authority and influence this school can bring to bear will not succeed in forcing thoughtful and intelligent people to accept such assertions. What strikes one as most wonderful is, that any one should try to make people believe that ordinary force can form, or has formed, mechanism, or other things in this world capable of working or action."

Do you believe in this doctrine: That in all this fair earth no evidence exists of an intelligent cause that directs the forces? Do you believe that the lightning, which, it is said, Franklin tamed, and which Morse taught to write, and which, amid the terrors of the storm, speaks of the power and glory of God, is the same blind force that reared your frame from the dust of the earth, moves your body as a nerve force, warms it, thinks, feels, reasons, and wills for you?

No one disputes that all the ordinary forces operate in the living body, but they operate only in a body said to contain life, for this alone can utilize them. The presence of another and higher force seems necessary for the proper action of the physical forces. Life is an independent force, like mind—a force resident in the organization—at times but a transient tenant. When vital force ceases to operate, the physical forces are powerless. When vital force is active in a plant, the sunlight decomposes the compounds which nourish it—carbonic acid releases its carbon, which is deposited in the plant. Remove this force, and the sun shines in vain upon it. The grain of corn, planted beneath the sod, puts forth its sprout before sunlight falls upon it. Stored up with the germ is sufficient nutriment to maintain its growth until it appears above the surface. When this store is expended, sunlight is needed to decompose the compounds that shall nourish it. We say Nature provides this energy; the materialist says it is the molecular basis that affords this power. The materialist urges that mind exhausts nerve force, and that nerve force wears out the body: Steam wears out an engine—is steam, therefore, a property of the engine?

In order that you may be enabled to compare the views of the two schools, I will present in brief the argument upon which they rest their theories. First, that of the Physiological—then that of the Psychological school:*

The Materialist believes not in the separate existence of mind, but says that we know only of its existence by its manifestations; that experience alone must be our instructor, and that of a mind acting apart from matter, we have no experi-

*On the relations of soul to matter, see Porter's Human Intellect, pp. 16 to 40.

ence. As we have before stated, the fact that we have no such experience, is not conclusive evidence that mind can not so exist. It rather tends to show our limited knowledge, than the contrary.

Another argument advanced is, that mental power is developed only in a degree that corresponds with that of the physiological and anatomical development of the cerebral structures. Growth of mind keeps pace with growth of brain. Matured mind is only functional activity belonging to a fully developed cerebral organization.

Again, it is alleged that the mind receives its store of knowledge through the senses—hence the mind is dependent wholly upon the body. The eye gives knowledge of light, color, distance; the ear of sound; the nerves convey ideas of resistance, extension, weight. The destruction of a single organ of sense deprives the mind of all knowledge to be obtained in that direction. As the organs of sense are one by one destroyed, so does the possibility of the mind diminish for the acquisition of knowledge. This goes farther than Locke and the Sensual school, who declared that there is nothing in the mind that has not first been in the senses. It shuts off all upon which the Mystics rest in their philosophy—i. e., that the mind may be in direct communion with God, and receive direct revelations of his will. It reduces the mind to a compound body, composed of the senses, or makes it but the sum total of them, for, however else they may explain it, according to this theory we have no knowledge of mind further than that learned by the exercise of the senses, and in proportion as they are wanting, so is the evidence of mental existence diminished. For it is clear by this process of reasoning that the organs of sense are not servants of the mind, but mind itself. By it, if the organs of sense did not first act, there would never be mental activity, and there would be increased mental activity in proportion as the senses are stimulated.

It is true that the main process of developing the idiotic mind is through the senses, and unless aroused through them can never be aroused. If we regard the senses as only outposts where sentinels are placed who give the mind notice within of all that is observed without, then it in no way follows that they are other than sources of information.

Again, and this is the strongest argument that is advanced, the materialist urges that mind is a property of brain, for the reason that all changes in the brain affect mental activity. A change in the circulation, either congestion, loss of blood, or a blood stream loaded with impurities; pressure upon the

brain substance; the irritation of inflamation: a disturbance in remote organs, suspends or modifies mental action.

The advocates of this theory claim for it that it is but the extension of ordinary physics to the brain. Thus low in the order of nature we have the attraction of gravitation and of cohesion. A little higher, chemical affinity, chemical action and combination. By chemical laws bodies are called into existence that had no existence before—thus sulphuric acid, a violent poison, may unite with magnesia, a compound unlike either, a new organization as it were. The lower bodies are regulated by mathematical laws, which is mainly force of gravity, and the higher by physical, which become more and more complex as we ascend in the order of nature. Thus, as we ascend from the attraction of simple particles of matter, as in cohesion, we next find the formation of crystals, still, however, obeying mathematical laws, in always assuming definite forms. To follow out the theories of this school, we must still extend this to the development of cell life and activity—to animal existence, and the functional activity of every organ of the body.

Such are the grounds upon which rest the theories of the Physiological school, who claim that a cabbage head differs only in degree, not in kind, of energy, from the heads of those who accept its teachings.

But, however exclusive and one-sided the views of this school may be, they have accomplished much for science, by inciting observation, experiment, and research.

The Psychological school regards man as an intelligence, served by organs. In metaphysics they are termed *dualists*, because they regard the mind as an entity*—i. e., mind and body as two distinct organizations. This class includes those who accept the teachings of Revelation. They also believe in the immortality of the soul. There are many who believe that the mind is a property of brain, who claim that if man has a soul it is something distinct from the mind. But a soul without a mind is something inconceivable to us. The common view of the relation of mind and body is well illustrated by Plato, in the dialogue of Socrates and Alcibiades, first Alcibiades. I give it as translated by Sir William Hamilton:

Socrates. Hold, now, Alcibiades, with whom do you at present converse? Is it not with me?

Alcibiades. Yes.

Soc. And I also with you? *Alc.* Yes.

Soc. It is Socrates, then, who speaks? *Alc.* Assuredly.

Soc. And Alcibiades who listens? *Alc.* Yes.

Soc. Is it not with language that Socrates speaks?

* *Entity*, that having existence independent of the *idea*.

Alc. What, now? Of course.

Soc. To converse and to use language, are not these, then, the same? *Alc.* The very same.

Soc. But he who uses a thing, and the thing used, are not these different? *Alc.* What do you mean?

Soc. A currier—does he not use a cutting knife and other instruments? *Alc.* Yes.

Soc. And the man who uses the cutting knife, is he different from the knife he uses? *Alc.* Most certainly.

Soc. In like manner the lyrist—is he not different from the lyre he plays on? *Alc.* Undoubtedly.

Soc. This, then, was what I asked you just now—does not he who uses a thing seem to you always different from the thing used? *Alc.* Very different.

Soc. But the currier—does he cut with his instruments alone, or also with his hands? *Alc.* Also with his hands.

Soc. He also uses his hands? *Alc.* Yes.

Soc. And in his work he uses also his eyes? *Alc.* Yes.

Soc. We are agreed, then, that he who uses a thing, and the thing used, are different? *Alc.* We are.

Soc. The currier and the lyrist are, therefore, different from the hands and the eyes with which they work?

Alc. So it seems.

Soc. Now, then, does not a man use his whole body?

Alc. Unquestionably.

Soc. But we are agreed that he who uses, and that which is used, are different? *Alc.* Yes.

Soc. A man is, therefore, different from his body?

Alc. So I think.

Soc. What, then, is man? *Alc.* I can not say.

Soc. You can at least say that the man is that which uses the body? *Alc. True.*

Soc. Now, does anything use the body but the mind?

Alc. Nothing.

Soc. The mind is, therefore, the man.

Alc. The mind alone.

A French writer, Gatien Arnoult, makes the following appeal to experience:

"I turn my attention on my being, and find that I have organs, and that I have thoughts. My body is the compliment of my organs; am I, then, my body, or any part of my body? This I can not be. The matter of my body, in all its points, is in a perpetual flux—in a perpetual process of renewal. *I*—*I* do not pass away, I am not renewed. None, probably, of the molecules which constituted my organs some years ago

form any part of the material system which I now call mine. It has been made up anew; but I am still what I was of old. These organs may be mutilated; one, two, or any number of them may be removed; but not the less do I continue to be what I was—one and entire. It is even not impossible to conceive me existing, deprived of every organ. I, therefore, who have these organs, or this body, *I* am neither an organ nor a body.

"Neither am I identical with my thoughts, for they are manifold and various. *I*, on the contrary, am one and the same. Each moment they change and succeed each other: this change and succession takes place in me, but I neither change nor succeed myself in myself. Each moment I am aware or am conscious of the existence and change of my thoughts; this change is sometimes determined by me, sometimes by something different from me; but I always can distinguish myself from them—I am a permanent being, an enduring subject, of whose existence these thoughts are but so many modes, appearances, or phenomena; I, who possess organs and thoughts, am, therefore, neither these organs nor these thoughts. I can conceive myself to exist apart from every organ; but if I try to conceive myself existent without a thought, I am unable. This or that thought may not be perhaps necessary, but of some thought it is necessary that I should be conscious, otherwise I can no longer conceive myself to be. A suspension of thought is a suspension of my intellectual existence; I am, therefore, essentially a thinking, a conscious being; and my true character is that of an intelligence, served by organs."

Arbuthnot in a poetical way presents the same ideas:

"What am I, whence produced and for what end?
Whence drew I being, to what period tend?
Am I the abandon'd orphan of blind chance,
Dropp'd by wild atoms in disordered dance?
Or, from an endless chain of causes wrought.
And of unthinking substance born with thought.
Am I but what I seem mere flesh and blood,
A branching channel with a mazy flood?
The purple stream that through my vessels glides,
Dull and unconscious flows, like common tides.
The pipes, through which the circling juices stray,
Are not that thinking *I*, no more than they;
This frame compacted with transcendent skill,
Of moving points, obedient to my will;
Nursed from the fruitful glebe, like yonder tree,
Waxes and wastes—I call it mine not me.
New matter still the mouldering mass sustains;
The mansion chang'd the tenant still remains;
And, from the fleeting stream, repaired by food,
Distinct, as is the swimmer from the flood."

The Psychological school, like the Physiological, views but half the subject. It maintains that no study of the brain, however far it may be carried, chemically, anatomically, or physiologically, can throw any light upon the mysterious union of mind and matter. It studies only the *agent*. The Physiological school ignores the agent, admits no intervention of creative intelligence, divine, initiative, nor human free will; it denies all intelligent providential law, confounds *subject* and *object*, and satisfies itself with an analysis of the instrument, rather than aspire to a knowledge of the agent. It rejects the voice of conscience and of intuition, and has been likened by Joseph Mazzini to the man who analyzed the ink with which a poem was written, and declared that he had discovered the secret of the genius who wrote it.

The Psychological school regards the mind as a distinct existence, and the nerves and senses as only so many gates through which knowledge enters to it. Their arguments are that the phenomenon of mental action are unlike the phenomenoa which belong to matter. The phenomenoa of material substances can be reduced to a common basis—they are discerned by the senses. They can be felt, seen, tasted, touched, and measured. Mental phenomenoa are known only in consciousness—they can not be measured, weighed, touched, or tasted. They are wholly unappreciable by the senses. The phenomena of matter, as motion, taste, color, weight, density, sound, etc., can be appreciated by the senses. But who can measure the volume, weight, density, or velocity of thought? Electricity, heat, light, and chemical affinity, obey their respective laws, but what code of laws will regulate a train of thought, or govern the production of a single idea? The physical forces are identified with the presence of matter, and have besides well known definite relations with matter. Thought, though dependent on the brain, can not be recognized as having a single property that characterizes these forces. The mind can recognize its own states, and distinguish its own action from that of every force around it. This is what is meant in metaphysics by the term *consciousness*. In consciousness we recognize the fact that, while heat or electricity can be conducted from one body to another, the mind retains its own identity, its productions are not capable of being conducted away, nature having made no bridge over which a thought can be carried from one mind to another. In conscious mental action we learn that the mind is not the body, but distinct from it—its master, the mind can act in opposition to all the physical forces to a certain extent, and even vital force, as in resisting

the tendency to sleep, or fatigue, and in many ways assert its independence and separate existence. The mind is a controling, self acting power, matter inert. The energy that induces mental action is within, it can resist, or elect to act, through volition, under the influence of external influences, recognizing this influence, hence rendering Consciousness the most credible witness introduced by either school. Writers of this school have advanced many theories to explain the union, or intercourse of mind and matter, and our lecture would be very incomplete without we presented the main doctrines, presented to explain this relation.

Laromiguiere, "Lecons de Philosophie," has presented the theories of the Dualists under four heads:

1st. Of the system of Assistance or of Occasional causes; 2d, of the Pre-established Harmony; 3d of the Plastic medium; and 4th of Physical influence.

1. The first, or doctrine of Divine assistance maintains that there can be no possible communication between mind and matter. This was taught by Descartes, De la Forge, and Malebranche. It asserts that when there is motion in the bodily organization, God excites in the mind corresponding representations. When thoughts arise in the mind, He expresses them by a corresponding movement in the body.

God, according to the advocates of this scheme, governs the universe, and its constituent existence, by the laws according to which He has created them; and as the world was originally called into being by a mere fiat of the divine will, so it owes the continuance of its existence from moment to moment only to the unremitted perseverence of the same volition. Let the sustaining energy of the divine will cease, but for an instant, and the universe lapses into nothingness. The existence of created things is thus exclusively maintained by a creation, as it were, incessantly renewed. God is thus the necessary cause of every modification of mind, and His efficiency is sufficient to afford an explanation of the union and intercourse of extended and unextended substances.

"External objects determine certain movements in our bodily organs of sense, and these movements are, by the nerves and animal spirits propagated to the brain. The brain does not act immediately and really upon the soul; the soul has no direct cognizance of any modification of the brain; this is impossible. It is God himself who, by a law which he has established, when movements are determined in the brain, produces analogous modifications in the conscious mind. In like manner, suppose the mind has a volition to move the arm; this

volition is, of itself inefficatious, but God, in virtue of the same law, causes the answering motion in the limb. The body is not, therefore, the real cause of the mental modifications; nor the mind the real cause of the bodily movements. Nevertheless, as the soul would not be modified without the antecedent determinations of the soul—the changes and determinations are in a certain sort necessary. But this necessity is not absolute; it is only hypothetical or conditional. The organic changes, and the mental determinations are nothing but simple conditions, and not real causes; in short they are occasions or occasional causes."

The sum of this, the Cartesian view, is that God is the only real agent in the universe.

II. The second system is that taught by Liebnitz. This denies not only all connection between spiritual and material substances, but between all substances. The author of this hypothesis, who also maintained the view that man is composed of monads, explains the apparent communion of mind and matter, from a previously decreed mutual adaptation and co-arrangement of the Creator. This is the doctrine of pre-established or pre-determined harmony.

Leibnitz reproaches the Cartesians with converting the universe into a perpetual miracle, and of explaining the natural, by a supernatural order, this would annihilate Philosophy; for, Philosophy consists in the investigation and discovery of the Second Causes which produce the various phenomena of the universe. You degrade the Divinity, adds Leibnitz, you make Him act like a watchmaker, who, having constructed a time piece, would still be obliged himself to turn the hands, to make it mark the hours. A skillful machinist would so frame his clock that it would go for a certain period without assistance or interposition. So when God created man, he disposed his organs and faculties in such a manner that they are able of themselves to execute their functions and maintain their activity from birth to death. This theory is, that "God, before creating souls and bodies, knew all these souls and bodies; he knew, also, all possible souls and bodies." Now, in the infinite variety of possible souls and bodies, it was necessary that there should be souls whose series of perceptions and determinations would correspond to the series of movements which some of these possible bodies would execute; for in an infinite number of souls, and in an infinite number of bodies, there would be found all possible combinations. Now, suppose that, out of a soul whose series of modifications corresponded exactly to the series of modifications which a certain body was destined to perform, and of

this body whose successive movements were correspondent to the successive modifications of this soul, God should make a man, it is evident that, between the two substances which constitute a man, there would subsist the most perfect harmony. It is thus no longer necessary to devise theories to account for the reciprocal intercourse of the material and spiritual substances. These have no mutual influence—no communication. The soul passes from one state, one perception, to another, by virtue of its own nature. The body executes the series of its movements without any participation or interference of the soul in these. The soul and body are like two clocks accurately regulated, which point to the same hour and minute, although the spring which gives motion to one is not the spring which gives motion to the other. Thus the harmony which appears to combine the soul and body is, however, independent of any reciprocal action.

This harmony was established before the creation of man, and hence it is called the pre-established, or predetermined, harmony."

III. The third hypothesis has for its author Plato. He illustrated the relation of soul and body, by saying: the soul is in the body, like a sailor in a ship; that the soul employs the body as its instrument, but that the energy, or life and sense of the body, is the manifestation of a different substance —of a substance which holds a kind of intermediate existence between mind and matter. This doctrine claims that this plastic medium participates of the two natures; it is partly material, partly spiritual. As material, it can be acted on by the body; and, as spiritual, it can act upon the mind. It is the middle term of a continuous proportion. It is a bridge thrown over the abyss which separates matter from spirit.

IV. The *fourth* hypothesis, or that of physical influence, is the doctrine taught by the Schoolmen. It is the oldest of the four doctrines, and was advocated by Aristotle, and taught in the earlier schools of Greece. This is the commonly accepted doctrine of the Psychological schools of the present day, modified as each may think itself able to substitute a better hypothesis. This doctrine Laromiguiere sums up as follows:

"External objects affect our senses, and the organic motion they determine is communicated to the brain. The brain acts upon the soul, and the soul has an idea, a perception. The mind thus possessed of a perception, or idea, is affected for good or ill. If it suffers it seeks to be relieved of pain. It acts in its turn upon the brain, in which it causes a movement in the nervous system: the nervous system causes a muscular motion

in the limbs, a motion directed to remove, or avoid the object which occasions the sensation of pain. The brain is the seat of the soul, and, on this hypothesis, the soul has been compared to a spider seated in the center of its web. The moment the least agitation is caused at the extremity of this web the insect is informed and put upon the watch. In like manner the mind situated in the brain has a point on which all the nervous filaments converge; it is informed of what passes at the different parts of the body; and forthwith it takes its measures accordingly. The mind thus acts with a real efficiency upon the body. This influence or action being real, physical in the course of nature, the body exerts a physical influence on the soul, the soul a physical influence upon the body. This system is simple, but it affords us no help in explaining the mysterious union of extended and unextended substance."

And now, gentlemen, with the theories of these two schools before you which will you accept. Will you ignore the existence of matter, and study only the phenomena of mind, or will you ignore mind and confound Cause and Effect. It is a metaphysical axiom that the effect can never be the cause.*

The Physiological School studies only effects and raises them to the grade of causes. Force is made to be self-acting and self-directing, the phenomena resulting from force are effects not causes. Mental phenomena bear the same relation to mind. If you believe that common force, or chemical action produces thought, take a brain to the laboratory of our distinguished chemist, and ask him by any process known to chemists to produce a single thought. As we forewarned you we fear your conclusions are no clearer than before we began. We are unable to demonstrate to you clearly the process by which a single thought results, the relation of mind and matter by virtue of which mental phenomena are produced. We have shown you, more by inference than by direct proof, that mind is a final cause, a first cause, an ordinary, directing force, dependant upon a material world, a material organization, and physical laws for its operations and manifestations. I admit that every mental action is coincident with some vital change in the brain, but I do not admit that mental action consists in this vital change, more than that the movement, the wear and tear of an engine, is the force that moves it. Where else in nature do we find the same thing become at the same time cause and effect. The operation of an intelligent cause alone can satisfy the mind of man as an explanation of

* I. e. the same thing can not be at the same time cause and effect.

the workings of the mind. The mind of a Creator is everywhere displayed in all His works. It

> "Breathes in our soul, informs our mortal part,
> As full, as perfect, in a hair as heart."

If you accept these views you run the risk of being called by the self styled scientific men of this generation, a saint. But remember, gentlemen, that weak minds, unaccustomed to bear the burden of thought, who accept everything as authority upon the opinions of others, when they come in contact with this class of men, who ridicule every accepted principle of truth and who have no reverence for Revelation, are easily turned aside and made to disown the teachings of their own consciences, and becoming skeptics, readily believe that education and social influence alone inculcates these eternal truths. But whether you accept my views or not, let me warn you that science which prides itself in its own wisdom, has in no age of the world sustained itself. It falls. "Science without religion is insane, reason without revelation gropes about in the dark, and Philosophy loses her ordination as Priestess of the Most High, unless she be faithful in her office, as bearer of both incense and light."

With theories that develop man through successive degrees of animal existence from the lower forms of life, through the agency of self acting force, I have no sympathy more than those which make all force identical. I believe man's origin more elevated. "The hand that molded the dust into the abode of a sentient being, touched it with perfection; and no better type of form or finish will be required by the spirit of man through the dispensations of earth, be they dark or be they glorious, than a body like that in which the first man bowed in worship, or walked erect in fellowship with his God." Truth ever is the same, whether accepted or rejected. Moral clouds may obscure it, skepticism shut it off as a cloud the Sun, yet

> "Fond, impious Man! thinkst thou yon sanguine cloud,
> Raised by thy breath, has quenched the Orb of day;
> To-morrow he repairs the golden flood,
> And warms the Nations with redoubled ray."

But after all, in your conclusions your own judgments must guide you, whatever respect you may show me as your instructor the assertion of the poet will be realized:

> "T'is with our judgments as our watches; none
> Go just alike, yet each believes his own."

With this conflict of opinion and diversity of judgment, *how shall we study the mind.*

The Psychologist says: *study phenomena.* The Physiologist says: *study the brain.* Gentlemen, the common sense way is to *study both.* Take a practical view of the question. When a medical man is called into court to interpret the elements that constitute a case of insanity, does he figure before the court and jury brain cells, and processes, talk of connective tissue, of tubuli, of cortical and white substance? Does he state how much the brain of the individual is deficient in phosphorus, that the laboratory wants stocking up; does he discuss brain circulation, the relative weight of brain to mental capacity? All questions that are legitimate in their true relations to insanity. No, he becomes at once a Psychologist. He considers the power of Will, attention, memory, reasoning faculty and judgment. He makes his "opinion" up from a metaphysical stand point, and if physical symptoms exist indicative of corporeal derangement he details them to stengthen the presumption that insanity exists, but in no case would he on these alone risk an opinion that would affect his reputation. When we study electricity we study not only phenomena but materials. We learn what substances are good conductors and what are non-conductors. We study strength, weight, durability; and when we utilize steam, in the application of instruments to every day requirements. What would you learn of electricity from an analysis of the conducting wire? What would you learn of steam though you dissected every engine in the land without you employed this motor power? What do you learn of nerve force by an analysis, microscopic examination, or any test to which you can submit a portion of a nerve trunk? The microscope, the scalpel, and the laboratory will give you an insight into healthy brain and nerve structure. Study the instrument. The instrument in operation elicits phenomena that are indices of its perfect condition. Study the phenomena. The only true method consists in a thorough knowledge of the anatomical and physiological relations of the brain, joined to a thorough analysis and classification of mental phenomena. With this in view, our next lecture will discuss the three divisions or departments of the mind, recognized by metaphysicians, the Intellect, the Sensibilities, and the Will, as a basis for a study of the varieties of insanity. When we study the pathology of insanity, the subject will receive due consideration from the physiological stand point.

And now, gentlemen, in conclusion, let me beg of you not to despise any source of information that can afford you light to

guide you in the study of insanity. If because morality and religion have been based upon the views of the metaphysical school, if they are in harmony, or rather if they are blended, and you are skeptical, do not ignore its teachings lest you be charged with fanaticism or aught else. Is it more pleasing to you to believe yourselves bastards, the children of chance, the offspring of the physical forces, than to accept the Biblical account of the creation of man?

"If man is thus an orphan at his birth, and an outcast in his destiny; if knowledge is to be his punishment and not his pride; if all his intellectual achievements are to perish with him in the dust; if the brief tenure of his being is to be renounced amid the wreck of vain desires, of fruitful hopes, and of bleeding affections, then in reality as well as in metaphor is life a dream."

There are but two sides to the question; on one hand you have the conjectures of man, on the other Revelation. The Bible is not an expounder of science, but with no better light to guide us shall we accept it? Shall we not acknowledge that in all that pertains to the spiritual, the mind of man, its Author, the Creator of mind, is the best expounder.

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